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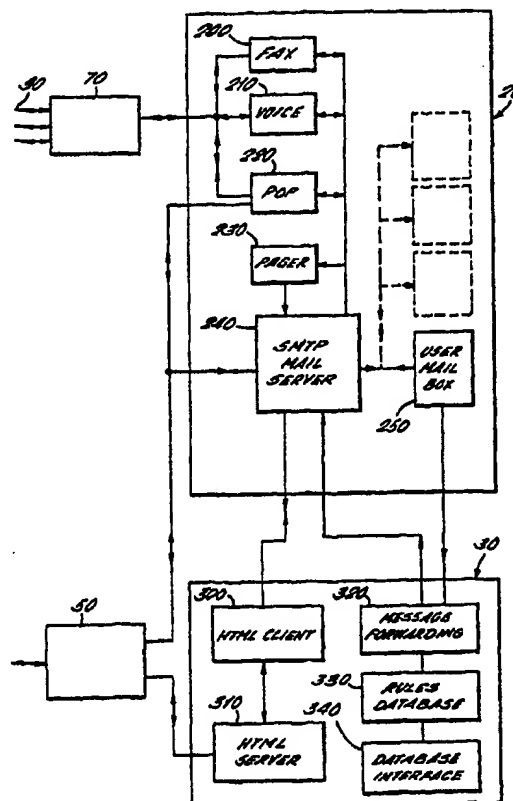
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(54) Title: SYSTEM AND METHOD FOR TELECOMMUNICATIONS DATA HANDLING

(57) Abstract

A system and method is disclosed for forwarding data via a communications hub (10) from one of a plurality of sources, such as personal computer (140), fax machine (100) or electronic pager (130), to one of a plurality of destinations, such as a telephone (110) or personal computer (140). Forwarding of data is carried out on the basis of one or more user defined rules stored in a memory (30) accessible by a hub data processor (20). The hub data processor (20) converts the format of the data from the data format of the source to a data format suitable for interpretation by the destination, in accordance with the defined rules. The system and method provide improved flexibility and allow a user to ensure that he may be contacted in a manner dependent upon, say, the time of day or present location.



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including memory means programmable by a user of the system, the memory means storing at least one user defined rule specifying a destination, selected from the said plurality of destinations, to which the said array of data is to be forwarded; the hub data processor further including a converter means, arranged to convert the said array of data in the said source data format into a destination data format different from the source data format and selected in dependence upon the said at least one user defined rule specifying the said destination to which the said array of data is to be forwarded, and an output arranged to transmit the said array of data in the said destination data format to the said specified destination; wherein the destination data format is capable of interpretation by a telecommunications device at the said destination specified by the said at least one user defined rule.

The system of the invention provides significantly increased flexibility relative to previous data forwarding systems. A user may program one or more rules which define the destination to which incoming messages are to be sent.

The system is not restricted to one particular format of source data or one particular format of destination data.

Preferably, the first converter means is further arranged to convert the said array of data in the said source data format into a standard data format, such as Simple Mail Transfer Protocol (SMTP), prior to conversion into the said destination data format, the said standard data format being intelligible by the said hub administrator.

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In that case, the converter means may include a plurality of gateways each arranged to convert the said array of data in the said source format into the said standard data format. Additionally, each of the
5 plurality of gateways may be further arranged to convert the said array of data in the standard data format into the array of data in the said destination data format.

10 Preferably, the hub data processor further comprises an SMTP mail box arranged to receive and store the said array of data in the said standard data format.

In a preferred embodiment, the system may further
15 comprise a first telecommunications device at the said first of the plurality of sources, arranged to transmit the array of data in the said source data format to the input of the hub data processor, and a second telecommunications device different from the
20 said first telecommunications device and located at the said specified destination, the second telecommunications device being arranged to receive the array of data in the said destination data format from the output of the hub data processor.

25 For example, the first telecommunications device may be a personal computer capable of connection to the Internet, a facsimile machine, an electronic pager, a mobile telephone or a land line telephone. The format
30 of the array of data received from the source and transmitted to the destination are then chosen accordingly.

For example, if the source from which the array of
35 data is received is a mobile telephone, then the array

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data format, and selected in dependence upon the said at least one user defined rule specifying the said destination to which the said array of data is to be forwarded; and (d) transmitting the said array of data in the said destination data format to the destination specified by the at least one user defined rule.

Brief Description of the Drawings

Embodiments of the invention will now be described by way of example only and with reference to the drawings, in which

Figure 1 shows a schematic block diagram of a system according to an embodiment of the present invention; including a communications hub;

Figure 2 shows the communications hub of Figure 1 in greater detail; and

Figures 3a, 3b and 3c show typical images from a computer screen during programming of the communications hub in the system of Figures 1 and 2.

Detailed Description of the Preferred Embodiment

A block diagram of a system according to an embodiment of the present invention is shown in Figure 1.

The system comprises a communications hub 10 which receives, processes and forwards electronic data in a wide variety of formats. The hub 10 includes a hub data processor 20 which is configured to receive electronic data in the form of e-mail messages, facsimile messages, voice mail messages and so forth.

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The hub 10 also contains a hub administrator 30, linked to the hub data processor 20, which oversees the processing of the incoming electronic data in a manner to be described in detail in connection with Figure 2.

The hub data processor 20 and hub administrator 30 are connected to one another using a local area network 40 such as an Ethernet network. The communications hub 10 also comprises a plurality of communications sockets to allow input and output of electronic data to the hub 10 in various forms. A first socket includes a bridge 50 which is connected to the local area network 40 and allows connection of that local area network to the Internet 60.

A second communications socket includes a telephone connection 70, which may in turn be linked to a modem (not shown). This allows the hub data processor to receive and forward data in formats such as facsimile or voice mail. It also permits dial-up access by a personal computer using a variety of serial or other protocols, such as SLIP or PPP. As will be understood by the person skilled in the art, the hub 10 may include software drivers for driving the modem, for example.

In particular, and as shown in Figure 1, the telephone connection 70 allows access along a plurality of physically or logically separate lines 90 from the telephone network 80. The use of a plurality of telephone lines 90 allows multiple simultaneous access to and from a plurality of sources.

The telephone connection 70 may allow connection via

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the public telephone network 80 to a facsimile machine 100, a conventional or cellular telephone 110, and a computer 140.

5 Likewise, the bridge 50 allows connections via the Internet 60 to a computer 140, or to an electronic pager 130 via a pager service provider 120. Remote e-mail addresses 15 may be accessed via the Internet 60 as well.

10 Electronic data in one of the above formats is sent to the communications hub 10 via the telephone connection 70 or the bridge 50. Here, it is processed by the hub data processor 20, as will be described in connection
15 with Figure 2. It is then forwarded to one of a chosen plurality of destinations. A user is able to define, by programming the hub administrator 30, to which of the plurality of destinations the incoming data is to be forwarded.

20 For example, electronic data may be transmitted by a sender as an e-mail message from the computer 140 via the Internet 6 to the bridge 5 and then into the hub data processor 20. The hub administrator 30 may be
25 programmed so that the hub data processor 20 sends the incoming data received from the sender to a facsimile machine 100 accessible by a recipient. Thus, the data in e-mail format is converted to data in facsimile format and then sent via the telephone connection 70
30 along the lines 90 to the facsimile machine 100.

Having described in general terms the system of Figure 1, the communications hub 10 will now be described in more detail with reference in particular to Figure 2.
35 The block diagram of Figure 2 shows elements of the

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hub data processor 20 and the hub administrator 30 of Figure 1.

5 The hub data processor 20 is preferably implemented in hardware such as a computer running a UNIX operating system such as Linux ^(TM). The hub administrator 30 may likewise be implemented in hardware such as a computer running the Microsoft (RTM) Windows NT ^(TM) operating system. Other operating systems and hardware may be
10 employed.

The hub data processor 20 comprises a number of gateways 200-230, each of which may be implemented in software or in hardware. The hub data processor 20
15 also comprises an SMTP (Simple Mail Transport Protocol) mail server 240, typically implemented in software, with a number of associated user mailboxes 250. The SMTP mail server 240 is configured to receive and send e-mail messages over the Internet 60 as will
20 be familiar to the person skilled in the art, to receive e-mail messages directed to the Internet address of the hub data processor 20 and to store these e-mail messages in user's mailboxes 250 according to the header fields of each e-mail message.

25 Each of the gateways 200-230 may typically comprise a Unix process if the hub data processor is running a Unix operating system, or an application program interface if the hub data processor is running a
30 Microsoft (TM) operating system such as Windows NT (TM). The gateways typically comprise computer programs which convert electronic messages between an SMTP standard e-mail format and another electronic format such as facsimile or audio. Alternatively a
35 gateway may arrange for an e-mail message to be

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forwarded to another service provider, such as an electronic pager service provider, with appropriate headers and content.

5 The gateways may be obtained commercially and configured for operation within the system, or they may be designed and constructed particularly for the purposes of the present embodiment. Such gateways are generally known and will be readily implemented by
10 those of ordinary skill. Accordingly, no further details will be given of this aspect of the system.

In the following, the gateways are described as being bi-directional. That is, the gateways are configured
15 to receive data in a first format from a source and convert it to a format intelligible by the SMTP mailbox, and also to receive data from the SMTP mailbox and convert into that first format so that it may be understood by a destination. However, it will
20 be understood that separate gateways for receiving data in a first format and separately transmitting data in a first format may be employed if desirable.

A message received in audio, facsimile or e-mail
25 format by one of the gateways 200-230 is converted to e-mail format and passed to the SMTP mail server 240, to be stored in the mailbox 250 of the appropriate user. The appropriate user may be identified, for example, from the telephone number to which the
30 message was sent, or from the header fields of a received e-mail.

Messages passed to the SMTP mail server 240 from the message forwarding process in the hub administrator 30
35 are passed to the appropriate gateway 200-230

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according to data held in the fields of the e-mail header. The gateway then transmits the message, for example as a facsimile, an e-mail or an audio message. An electronic pager service provider may be instructed
5 by e-mail by the pager gateway 230. The SMTP mail server 240 therefore acts as a central hub for forwarding e-mail messages between the gateways 200-230, the user mailboxes 250 and the hub administrator 30.

10

The facsimile gateway 200 is configured to receive facsimile communications via the telephone connection 70, and convert them to an e-mail format in which an e-mail attachment contains the facsimile as a
15 graphical data file. The intended recipient of the facsimile transmission may be identified from the telephone number to which the facsimile was sent, and the header fields of the e-mail message completed appropriately for the purposes of handling the e-mail
20 message within the communications hub 10. Header fields of the e-mail message may contain other information such as the time of arrival of the facsimile, and information any further information that can be gleaned from the facsimile transmission
25 itself such as the telephone number of the transmitting facsimile machine.

The e-mail message generated from the facsimile is forwarded to the SMTP mail server 240 which then
30 stores it in the appropriate user mailbox 250.

The facsimile gateway 200 is also arranged to convert e-mail messages that are provided by the SMTP server 240 to facsimile format and to transmit them to a
35 remote facsimile machine 100 over the telephone

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network 80. The full text and attachments of an e-mail provided to the facsimile gateway 200 may be converted to facsimile format. The e-mail header may be included as text within the facsimile transmission, and the
5 destination telephone number for the transmission of the facsimile may be obtained from a suitable field in the header of the e-mail, such as the destination field. The generated facsimile message is then forwarded via the telephone connection 70 to be sent
10 over the telephone network 80 in the usual way.

Character recognition software may be provided to enable the facsimile gateway 200 to reduce the size of the e-mail that it generates from an incoming
15 facsimile message by converting it to a conventional text e-mail message, without a graphical data file attached.

The voice mail gateway 210 typically comprises
20 software running on the hub data processor 20, arranged to convert between audio messages and e-mail format, the audio messages being sent or received over the telephone network 80, for example to or from a conventional land line or cellular telephone 110. The
25 voice mail gateway 210 is arranged to respond to an incoming telephone call by playing a recorded or synthesised message in the same manner as a conventional telephone answering machine or voice mail service, and recording the audio message provided by
30 the caller.

An audio message received by the voice mail gateway 210 is converted to an e-mail message with an audio data file attachment. The telephone number to which
35 the call was made may be used to identify the client

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for whom the message was intended. This information is used to generate the required header fields of the e-mail message to ensure correct processing of the message when it is passed to the SMTP mail server 240, which stores the message in the mailbox 250 of the correct user. The headers of the e-mail message may be used to included any further information which may be obtained such as the telephone number of the caller.

10 The voice mail gateway 210 may also be arranged to receive e-mail messages from the SMTP mail server 240, convert them to an audio format by means of a speech synthesiser, and relay the message to an intended recipient telephone 110 using the telephone network
15 70.

A POP (Point-of-Presence) e-mail server may be used to provide a POP server gateway 220. E-mail messages may be forwarded to this gateway by the SMTP server 240 to
20 be stored until a client connects to the POP server gateway 22 either via the telephone connection 70 or the bridge 50 to collect the messages. This gateway may be used by a client whose remote computer 140 is not permanently connected to the Internet 60, and
25 would therefore usually be configured to send and collect e-mail messages using the POP protocol. The POP mail server gateway 220 also enables the user to send e-mail messages to the communications hub 10 using the POP protocol, for forwarding to other
30 internet e-mail addresses 150.

A pager gateway 230 is provided within the hub data processor 20. The pager gateway is arranged to forward an e-mail message passed to it by the SMTP mail server
35 240 to a remote pager service provider 120 for

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transmission to the user's pager 130. The pager gateway 230 is arranged to ensure that the correct headers are provided in the e-mail to the pager service provider. The pager gateway may use the SMTP mail server 240 to forward the e-mail message to the pager service provider 120.

The SMTP mail server 240 also acts as a gateway in that it is arranged to receive e-mail addressed to a client and received via the Internet 60 and to process it by storing it in the appropriate client mail box. It may also forward e-mail to the client or elsewhere as directed by the message forwarding process of the hub administrator 20.

As previously mentioned, the system allows the exchange of data between a sender and a recipient to be controlled by a set of rules defined by a user and stored upon the hub administrator. Referring once more to Figure 2, the logical layout of the hub administrator 30 is shown.

The hub administrator comprises an HTML-based e-mail client 300, an HTML server 310, a message forwarding process 320, a rules database 330 and a database interface 340.

The HTML-based e-mail client 300 is accessible to users through the HTML server 310. A user with a remote computer 140 may connect to the HTML server 310 either through the bridge 50 or the telephone connection 70. The HTML server 310 provides access to HTML pages provided by the HTML-based e-mail client 300. These HTML pages are adapted to enable the user to read the e-mail contained in the SMTP mailbox 250,

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either by the HTML-based e-mail server 300 reading the mailbox directly or by making the appropriate requests to the SMTP mail server 240.

- 5 The message forwarding process 320 may comprise a collection of PERL scripts or other suitable software elements which are executed from time to time, or which run continually. The message forwarding process 320 has access to the user mailboxes 250, and
- 10 processes the contents of each mailbox at regular intervals according to each user's set of message forwarding rules that are contained in the rules database 330.
- 15 The rules contained in the rules database 330 specify how e-mail messages arriving in the SMTP mail-account from the various gateways 200-230 are to be forwarded. Each rule provides criteria for selecting e-mail
- 20 messages. The criteria may be defined by the presence of certain text strings in particular fields of the e-mail header or text body, by total message size, by the present time of day and date, by the
- communications means by which the message arrived and so on.
- 25 Associated with each rule are defined actions which are to be performed if an e-mail matches the rule's criteria. The actions may include moving or copying an e-mail to another SMTP e-mail folder or to the user's
- 30 POP e-mail account. The actions may also include copying or moving the message via a speech synthesiser or facsimile message generator to a telephone number, copying or moving the message to a pager service provider for transmitting to the user's electronic
- 35 pager, or copying or moving the e-mail to another

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Internet e-mail address.

If the e-mail message satisfies the rule criteria then the e-mail header is suitably adapted according to the associated action to indicate the destination address,
5 format type and gateway before the e-mail is passed to the SMTP mail server 240.

The SMTP mail server 240 then passes the e-mail
10 message to the appropriate gateway 200-230, to be delivered to the destination address in the required format type.

A rule may also specify whether an e-mail message is
15 to be deleted from the user mailbox 250 on forwarding, or to be left in the mailbox. A single mail message may in general be forwarded to a number of different destinations in a number of different formats at a number of different times, if it satisfies the
20 conditions of one or more rules at one or more times.

The message forwarding rules for a particular user that are held in the rules database 330 may be modified by the user. An HTML (Hypertext Markup
25 Language) interface to the rules database 330 is provided using a database interface 340. This interface may be realised, for example, by using a software system such as Cold Fusion (RTM) that provides an interface between an HTML server and an
30 ODBC (Open Database Connectivity) database driver. ODBC drivers are commercially available that provide a standard interface to one of a number of different databases such as Microsoft Access (RTM) or Microsoft SQL Server (RTM). Cold Fusion allows access to a
35 database using requests written in SQL (Structured

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Query Language) and embedded within extensions to HTML.

5 Cold Fusion may be installed to operate either through
an API (applications program interface) written for a
particular HTML server, or as calls to a Cold Fusion
executable or script by using the CGI (Common gateway
Interface) HTML server scripting standard. In either
case, the HTML programmer constructing an HTML
10 interface to the rules database 230 has access to a
number of extensions to HTML that are provided by Cold
Fusion and enable HTML pages to be written that
provide a convenient interface between the client and
the rules database.

15 Typically, data receipt and forwarding may be offered
as a service by a service provider who owns and
maintains the hub communicator 10. A user registering
with the service provider is provided with access to
20 the hub. Typically, a new user will be provided with
an SMTP e-mail account and a POP e-mail account, and
will be able to connect to the hub using a remote HTML
browser.

25 For example, the user may access their SMTP mailbox by
connecting to the hub over the Internet or via a
telephone connection, using an HTML browser such as
Netscape Navigator or Microsoft Explorer. The hub
provides access to the user's SMTP e-mail account
30 using an HTML-based e-mail client so that e-mail can
be read, written, sent and otherwise conveniently
processed.

A user may also be provided with one or more telephone
35 numbers to which telephone voice mail or facsimile

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messages may be sent. Any message reaching the hub and addressed to the user is converted by the gateways in the hub to an e-mail message which is stored in the user's SMTP mailbox. The user for whom the message is intended may be identified either by means of the e-mail address or the telephone number to which the messages was sent.

Moreover, the user registered with the service provider is provided with remote access to the database, and a set of rules stored therein may be added or edited by the user. It will be understood that the database stores rules in a personal "folder" for an individual user, those rules being applied to that user's SMTP mail box only.

The procedure for defining and editing the database rules will now be described in more detail, referring to Figures 3a, 3b and 3c.

To access the database and define or edit rules, the user first connects to the hub 10 either by "logging in" via the Internet 60 or by effecting a dial-up connection via a computer modem communicating with the telephone connection 70. The user indicates his e-mail address and password to gain access to his personal SMTP mail box. At this point, a screen is displayed to the user which contains a list of messages which have been received at the hub 10 and have not been deleted. For example, if no rules have been defined, then any message arriving at the hub 10 will simply remain in the user's mail box until deleted either by the user or by the system administrator if they have remained in the mail box for more than a predetermined amount of time. A

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typical screen as displayed to the user is shown in Figure 3a.

5 The screen displayed to the user when he logs on and shown in Figure 3a has a hyperlink to a second page of text which is shown in Figure 3b. A series of boxes are provided which allow various criteria to be selected for handling the incoming messages.

10 The first box 400 in Figure 3b allows all messages addressed to the particular user to be forwarded or copied. This is particularly advantageous when the user is one of a plurality of users who each have addresses that are sub-domains of a domain name. Such
15 addresses may be inserted in the box 400 of Figure 3b thus defining that only incoming messages to that sub-domain name will be forwarded or copied.

20 The second box, 410, allows any mail copied to a particular user to be forwarded or copied again. Similarly, the third box 420 permits all messages arriving from a particular e-mail address, fax number and so forth to be forwarded or copied.

25 The fourth box 430 permits certain keywords to be defined in the subject header of an incoming e-mail and so forth. Thus, for example, any received message having a header including the word "urgent" may be forwarded or copied.

30 The fifth box 440 allows file sizes to be defined as a criterion for forwarding or copying, for example, it may be desirable that larger messages which are likely to include images, be sent to a user defined fax
35 machine, as set out in connection with Figure 3c

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below.

5 A final criterion allows messages arriving between certain times of the day 450, 460 and between certain days 470-530, to be specified. For example, a business user may wish to have all incoming messages forwarded to his home facsimile machine between 5 p.m. on Friday and 9 a.m. on a Monday.

10 Having set up the criteria upon which incoming messages are to be forwarded or copied, the final destination may be specified. This is achieved in yet a further screen shown in Figure 3c.

15 A first box 540 of the screen of Figure 3c allows the user to define the destination a message is to be forwarded to. For an e-mail destination, an Internet Protocol address is inserted. If on the other hand, the message is to be forwarded as a facsimile, a drop-
20 down box 550 allows the facsimile function to be selected. In that case, a facsimile telephone number is inserted into the box 540.

Likewise a second box 560 allows messages to be copied
25 rather than simply forwarded to a chosen destination. Again, the destination may be an e-mail address, a facsimile number, a pager number and so forth.

Finally, text files which are received by the hub
30 may be processed by setting up an automatic reply. That is, any sender of a text file received by the user's mail box may automatically receive a standard reply. The wording may be set by the user by completing a third box 570.

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Once all the criteria have been set up, the user clicks on a button 580 which updates the database 330 so that any future messages received at the hub 10 will be processed accordingly.

5

The present invention thus provides significantly improved flexibility with regard to the transmission of data between a source and a destination. In particular, there are no geographical limitations to the system, either in terms of remote access to the database for updating the rules, or to the sources and destinations of data received at the hub 10. Furthermore, whilst remote access to the database has been described with reference to a computer connection, it will be understood that voice controlled or touch-tone telephone controlled updating of the rules may equally be effected. This may be advantageous where a user has no access to a computer. All incoming messages received at the hub 10 may be forwarded to a telephone anywhere in the world, by setting up rules via a telephone as well.

10
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Finally, it is to be understood that, whilst data in facsimile, pager, e-mail, land line and mobile telephone formats have been described, any further data formats may be readily accommodated. The system, merely requires an additional gateway to be installed along with a further option in the software which allows rule creation and editing.

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CLAIMS:

1. A system for forwarding data from one of a plurality of sources to one of a plurality of destinations according to user-defined rules, comprising:
- 5 a hub data processor including an input arranged to receive an array of data in a source data format from a first of the plurality of sources, and
- 10 a hub administrator, in communication with the said hub data processor, and including memory means programmable by a user of the system, the memory means storing at least one user defined rule specifying a destination, selected from the said plurality of
- 15 destinations, to which the said array of data is to be forwarded;
- the hub data processor further including a converter means, arranged to convert the said array of data in the said source data format into a destination data format different from the source data format and
- 20 selected in dependence upon the said at least one user defined rule specifying the said destination to which the said array of data is to be forwarded, and an output arranged to transmit the said array of data in the said destination data format to the said specified destination;
- 25 wherein the destination data format is capable of interpretation by a telecommunications device at the said destination specified by the said at least one user defined rule.
- 30

2. The system of claim 1, in which the first converter means is further arranged to convert the said array of data in the said source data format into
- 35 a standard data format prior to conversion into the

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said destination data format, the said standard data format being intelligible by the said hub administrator.

5 3. The system of claim 1, further comprising a first telecommunications device at the said first of the plurality of sources, arranged to transmit the array of data in the said source data format to the input of the hub data processor, and a second
10 telecommunications device different from the said first telecommunications device and located at the said specified destination, the second telecommunications device being arranged to receive the array of data in the said destination data format
15 from the output of the hub data processor.

 4. The system of claim 1, in which the at least one user defined rule further specifies the times during which the said array of data is to be
20 transmitted to said first of the plurality of destinations.

 5. The system of claim 2, in which the hub administrator is arranged to scan the said array of data in the said standard format to locate data
25 strings therein, the at least one user defined rule further specifying that the said array of data is to be transmitted to the said destination specified by the said rule only when a user defined data string is
30 located by the hub administrator when the received array of data is scanned.

 6. The system of claim 1, in which the said source data format is selected from the group
35 consisting of e-mail format, facsimile format, pager

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format and voice format.

7. The system of claim 1, in which the said destination data format is selected from the group,
5 consisting of e-mail format, facsimile format, pager format, and voice format.

8. The system of claim 2, in which the said standard data format is Standard Mail Transfer
10 Protocol (SMTP).

9. The system of claim 3, in which the first telecommunications device is selected from the group consisting of a personal computer capable of
15 connection to the Internet, a facsimile machine, an electronic pager, a mobile telephone and a land line telephone.

10. The system of claim 3, in which the second
20 telecommunications device is selected from the group consisting of a personal computer capable of connection to the Internet, a facsimile machine, an electronic pager, a mobile telephone and a land line telephone.

25
11. The system of claim 1, in which the hub administrator is remotely accessible by a user of the system, whereby the said user may add a further user defined rule to the said programmable memory means
30 from a location remote from the said hub administrator.

12. The system of claim 1, in which the hub administrator is remotely accessible by a user of the
35 system, whereby the said user may edit an existing of

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the at least one user defined rules stored in the said programmable memory means.

13. The system of claim 1, in which the said
5 programmable memory means is a database which interfaces with the said hub administrator under software control.

14. The system of claim 13, in which the
10 database is SQL^(TM) which interfaces with the said hub administrator using Cold Fusion^(TM) operating upon a Microsoft® Windows® NT server computer.

15. The system of claim 13, in which the
15 database is Microsoft® MS-Access which interfaces with the said hub administrator using Cold Fusion^(TM) operating upon a Microsoft® Windows® NT server computer.

20 16. The system of claim 1, in which the hub data processor further comprises an SMTP mail box arranged to receive and store the said array of data in the said standard data format.

25 17. The system of claim 2, in which the converter means includes a plurality of gateways each arranged to convert the said array of data in the said source format into the said standard data format.

30 18. The system of claim 17, in which each of the plurality of gateways is further arranged to convert the said array of data in the standard data format into the array of data in the said destination data format.

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19. A method of forwarding data from one of a plurality of sources to one of a plurality of destinations according to user defined rules, comprising the steps of:

5 (a) receiving an array of data in a source data format, the said array of data being received from a first of the plurality of sources;

(b) storing at least one user defined rule specifying a destination to which the said array of data is to be forwarded;

10 (c) converting the received array of data in the source data format into a destination data format, different from the source data format, and selected in dependence upon the said at least one user defined rule specifying the said destination to which the said array of data is to be forwarded; and

15 (d) transmitting the said array of data in the said destination data format to the destination specified by the at least one user defined rule.

20

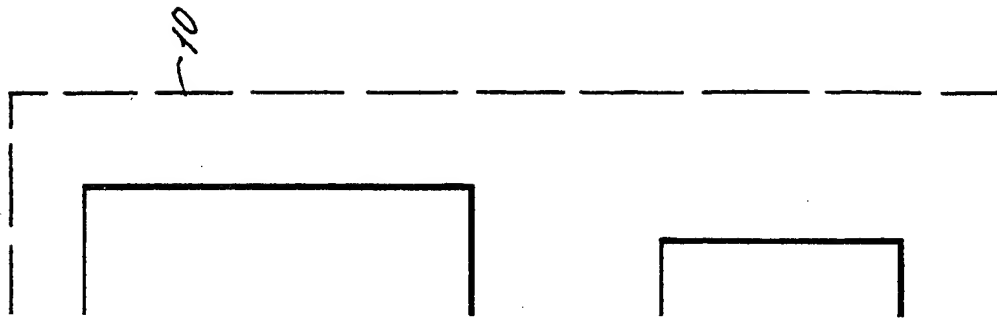
20. The method of claim 17, further comprising, after the step (a) of receiving the array of data in the source data format, converting the array of data, in the source data format into a standard data format prior to converting the said array of data into the said destination data format.

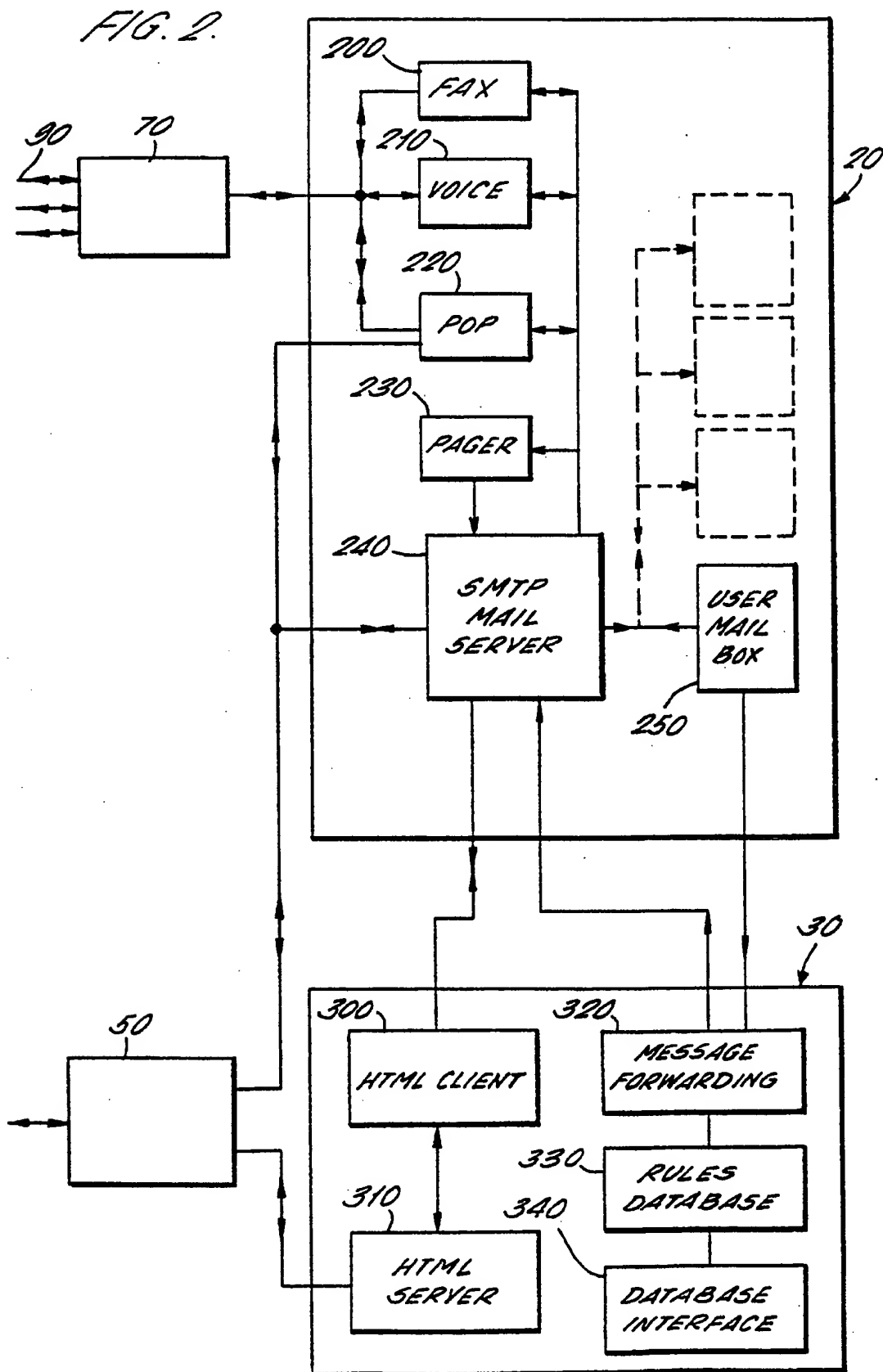
25

21. A system substantially as herein described with reference to the accompanying Figures.

30

22. A method substantially as herein described with reference to the accompanying Figures.





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INTERNATIONAL SEARCH REPORT

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C.(Continuation) DOCUMENTS CONSIDERED TO BE RELEVANT

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